

The ABC's of Missouri's Future Workforce

Part 1: Missouri's Colleges and Universities



October 2001

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT



MISSOURI ECONOMIC RESEARCH & INFORMATION CENTER



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Key Findings

- The great majority of Missouri's undergraduates attend post-secondary institutions within the economic region where they graduated from high school, or in adjacent economic regions.
- In the fall of 2000, 86% of Missouri's undergraduates attended public post-secondary institutions (41% attended 2-year and 45% attended 4-year post-secondary institutions).
- Between 1996 – 2001, the largest percentages of Associates and Bachelors degrees (entry-level degrees) awarded in Missouri were awarded in business, health and social science.
- Between 1996 – 2001, the largest percentages of Masters and Doctoral degrees (advanced degrees) awarded in Missouri were awarded in business, education, law and medicine.

Key Policy Implications

- Kindergarten through Baccalaureate (K-16) Initiatives, seeking to impact specific regions in Missouri, must concentrate their efforts on *regional* elementary, middle, secondary and post-secondary institutions in order to have the desired effect on students of those regions.
- Missouri's businesses should be encouraged to consult their regional post-secondary institutions on the training of current and prospective employees. Economies of scale in training and improved expansion planning may be realized by Missouri businesses.
- Missouri is well prepared across a broad range of expertise to support growth in the life science industries.
- Missouri's production of engineers, mathematicians and computer scientists must be increased if it is to meet the needs of information technology and advanced manufacturing.

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Part 1: Missouri's Colleges and Universities

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Analysis and reporting by Timothy O. Smith.

I. Overview and Methods

A chief concern in the location decisions of businesses is the availability of a qualified labor force from which to draw their employees. Missouri's readiness to offer workers with the skills needed to attract high paying, high technology industries is the subject of this study. Specifically, the types and levels of expertise being produced by Missouri's educational infrastructure is compared with the types and levels of expertise needed to attract the industries currently being targeted by the state – Information Technology, Advanced Manufacturing, and Life Sciences.

The Missouri Economic Research and Information Center (MERIC) analyzed data provided by the Coordinating Board for Higher Education (CBHE) in order to better understand Missouri's readiness to supply the targeted industries with well-prepared, highly skilled employees at all levels of employment. Missouri's colleges and universities were also explored to reveal regional differences in the subjects represented by undergraduate and graduate degrees awarded to each region's residents. In this analysis, simple frequency tables were used to determine where Missouri's undergraduates were attending school based upon their geographic origin. Only those institutions which grant Associates, Bachelor's, Master's, or Doctoral degrees were included in this analysis. The level and academic subject of degrees granted by undergraduate and graduate institutions are analyzed to depict the differences in subject areas of those degrees across different economic regions. The economic regions used for geographic analysis in this study are presented in Map 1.1. Maps and tables specifying where undergraduate students attended in the Fall of 2000 by economic region are also presented.

Map 1.1
Missouri Economic Regions



II. Missouri's Colleges and Universities

Students usually attend undergraduate institutions near their homes. The highlighted areas of Table 1 illustrate that the great majority of Missouri's undergraduates attend post-secondary institutions within their economic region (blue highlights), or in an adjacent region (yellow highlights). In those regions which do not contain a public four-year institution (Bootheel, North Central and South Central) or a public two-year institution (Lake Ozark – Rolla), students tend to attend an institution in an adjacent region. It is suggested that the specialized nature of the curriculum at the University of Missouri – Rolla is a large part of the reason why many of the undergraduates from that region attend institutions in the Springfield or Central regions. This finding suggests that proximity plays a primary role in where undergraduates attend school. One implication of this for employers is that the post-secondary institutions closest to one's business are the ones most likely to provide post-secondary education for the children of current employees. If it is also true that people tend to find work close to their parents' homes or close to their post-secondary institutions, then the local post-secondary institutions are also the most likely source of future employees. Because their pool of potential students is in this way very influenced by the success of local employers, local post-secondary institutions will also be those most likely to be responsive to implementing tailored programs for employee training. The numbers of students who attended post-secondary institutions are mapped by region of student origin in Section III: Regional Details.

Table 1: Fall 2000 Undergraduate Enrollment by Regions of Student Origin and Post-Secondary Institution

Region of Origin	Bootheel	Central	Kansas City	St. Louis City	St. Louis Metro	Springfield	Northwest	North Central	Northeast	West Central	Lake Ozark – Rolla	Cape Girardeau	Southwest	South Central
Region of College														
Bootheel	44.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.4%
Central	7.3%	65.9%	7.4%	3.7%	9.5%	4.2%	8.9%	18.9%	40.5%	7.7%	19.2%	7.4%	3.6%	5.1%
Kansas City	0.6%	1.3%	67.7%	0.4%	0.8%	0.8%	4.7%	2.8%	1.1%	5.3%	0.7%	0.4%	3.2%	0.5%
St. Louis City	0.3%	0.5%	0.2%	45.8%	9.3%	0.1%	0.1%	0.2%	0.3%	0.3%	0.6%	1.0%	0.1%	0.1%
St. Louis Metro	1.7%	4.2%	0.6%	38.1%	67.2%	0.5%	0.3%	1.0%	4.1%	0.6%	14.2%	11.3%	0.4%	0.8%
Springfield	6.9%	6.4%	4.2%	4.1%	3.9%	89.4%	3.6%	4.9%	5.4%	8.0%	40.9%	4.4%	18.8%	42.1%
Northwest	0.1%	1.8%	7.1%	0.4%	0.4%	0.2%	71.1%	15.3%	6.4%	1.7%	1.0%	0.2%	0.4%	0.3%
North Central	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	5.8%	37.8%	0.7%	0.3%	0.0%	0.0%	0.0%	0.0%
Northeast	0.9%	3.9%	1.9%	5.3%	2.7%	0.8%	1.7%	4.7%	34.2%	1.0%	2.0%	1.2%	0.5%	1.3%
West Central	0.8%	13.5%	9.2%	0.4%	1.7%	1.3%	2.9%	13.4%	4.1%	72.9%	11.0%	1.1%	1.3%	1.6%
Lake Ozark – Rolla	1.2%	1.5%	0.9%	0.4%	1.6%	1.1%	0.7%	0.8%	2.1%	0.9%	7.9%	1.9%	1.1%	1.8%
Cape Girardeau	35.6%	0.7%	0.1%	1.4%	2.8%	0.1%	0.1%	0.0%	0.8%	0.1%	0.9%	69.5%	0.1%	3.0%
Southwest	0.1%	0.2%	0.6%	0.0%	0.1%	1.5%	0.2%	0.2%	0.2%	1.2%	1.5%	0.1%	70.4%	2.2%
South Central	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	40.9%

Region of Origin	Bootheel	Central	Kansas City	St. Louis City	St. Louis Metro	Springfield	Northwest	North Central	Northeast	West Central	Lake Ozark – Rolla	Cape Girardeau	Southwest	South Central
Region of College														
Bootheel	2,463	2	1	0	8	5	0	0	0	0	0	96	0	15
Central	409	7,681	2,612	375	6,448	581	505	485	1,596	478	1,078	507	303	177
Kansas City	33	151	24,029	36	557	112	265	72	43	328	42	31	269	16
St. Louis City	14	53	68	4,615	6,300	11	4	4	12	18	32	71	9	5
St. Louis Metro	97	484	204	3,838	45,728	68	18	25	160	38	796	781	30	27
Springfield	384	748	1,498	411	2,680	12,507	203	126	212	498	2,299	300	1,585	1,466
Northwest	5	207	2,524	43	295	32	4,026	392	253	108	56	13	32	10
North Central	0	10	29	0	1	3	328	969	29	16	1	0	1	0
Northeast	52	459	677	537	1,840	106	96	121	1,350	64	110	85	46	45
West Central	45	1,579	3,266	44	1,142	184	164	344	163	4,517	620	74	110	54
Lake Ozark – Rolla	67	173	323	39	1,074	153	39	20	81	55	443	131	92	62
Cape Girardeau	1,984	79	36	138	1,936	12	3	1	33	7	50	4,789	10	104
Southwest	8	26	213	1	59	206	14	5	9	73	86	10	5,921	76
South Central	12	2	0	0	1	17	0	0	3	0	8	2	1	1,422

*Private 2-year colleges are not included, because those numbers are not available.

Calculated from: Statistical Summary of Higher Education 2000-2001

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Table 2 presents the types of institutions Missouri's undergraduates attended in the fall of 2000

In the fall of 2000, 86% of Missouri's undergraduates attended public post-secondary institutions, and of this percentage 41% of Missouri's undergraduate students attended 2-year public institutions. From 21% to 52% of the undergraduate populations in each economic region attended a 2-year institution except for the Northwest where both of the 4-year public institutions award 2-year degrees. In academic year 2000, 18% of the baccalaureate degrees awarded by Missouri's public baccalaureate degree granting institutions were awarded to students who had completed at least 12 hours at a public two-year institution¹. It should be noted from Table 2 that attendance at public 2-year post-secondary institutions is high both for Missouri's most rural regions (North Central, South Central and the Bootheel) and for its most urban regions (Kansas City and St. Louis City).

Table 2: Fall 2000 Total Undergraduate Enrollment by Region of Student Residence

	Total Public	Public 2-Year	Public 4-Year	Private 4-Year
Bootheel Region	96.0%	5,350	46.5%	2,594
Central Region	87.4%	10,187	27.1%	3,158
Kansas City Region	93.9%	33,299	48.1%	17,082
St. Louis City Region	83.9%	8,457	52.0%	5,240
St. Louis City Metro Region	82.7%	56,267	44.2%	30,065
Springfield Region	83.1%	11,630	40.0%	5,592
Northwest Region	98.2%	5,565	9.0%	508
North Central Region	90.5%	2,320	47.5%	1,219
Northeast Region	70.7%	2,790	28.1%	1,108
West Central Region	91.6%	5,682	36.8%	2,279
Lake Ozark – Rolla Region	69.3%	3,897	21.1%	1,188
Cape Girardeau Region	92.7%	6,386	44.5%	3,063
Southwest Region	95.5%	8,033	22.9%	1,923
South Central Region	78.7%	2,739	48.2%	1,676
State Totals	86.7%	162,602	40.9%	76,695

*Private 2-year college numbers not available. Calculated from: Statistical Summary of Higher Education 2000-01

¹ Source: 2001 Report on Progress Toward the Statewide Public Policy Initiatives and Goals for Missouri Higher Education

Table 3 presents the proportion of degrees by level of degree and discipline awarded by public 4-year (13 institutions), public 2-year (19 institutions), private 4-year (23 institutions) and private 2-year (3 institutions) degree granting institutions between the 1996-97 and 2000-01 academic years. The high percentage of Associates degrees in the arts and humanities is indicative of a high percentage of students pursuing these degrees as stepping stones toward a baccalaureate degree. The next highest percentages of Associates degrees are awarded in health and business.

The highest percentage of both Bachelors and Masters degrees are awarded in business. The second highest percentage of Bachelors degrees are awarded in social science, and the second highest percentage of Masters degrees are awarded in education. *The highest percentages of Doctoral degrees are awarded in the Other (law) and Health (medicine) categories.*²

Table 3: Percentage of Post-Secondary Degrees Awarded between 1996-97 and 2000-01 by Discipline

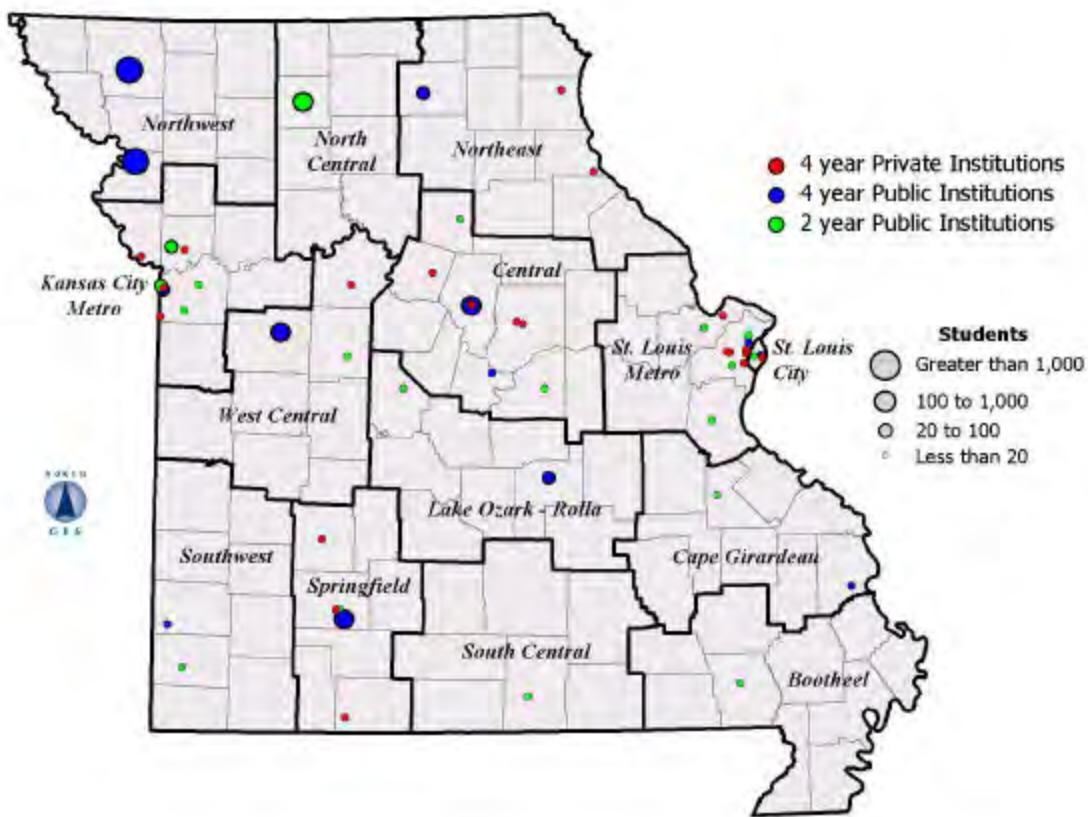
Academic Course of Study	Associates Degrees	Bachelors Degrees	Masters Degrees	Doctoral Degrees
Agriculture	1.1%	428	2.3%	3,086
Business	11.6%	4,732	25.1%	34,307
Communications	0.2%	64	5.2%	7,132
Computer Science	1.0%	391	3.0%	4,054
Education	0.4%	152	11.6%	15,905
Engineering	0.2%	97	4.3%	5,879
Arts and Humanities	50.1%	20,354	11.5%	15,685
Foreign Language	0.0%	4	1.0%	1,330
Health	14.8%	6,030	6.8%	9,237
Life and Physical Sciences	0.0%	13	6.2%	8,428
Mathematics	0.0%	7	0.8%	1,132
Public Services	4.3%	1,758	6.5%	8,920
Social Science	0.4%	156	13.8%	18,858
Other	7.8%	3,178	2.2%	3,018
Totals	100.0%	40,643	100.0%	136,694
				100.0%
				10,449

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

² See Appendix 1 for the Classification of Instructional Programs (CIP) Codes Associated with the discipline categories.

III. Regional Details

Where Did Undergraduates from the **Northwest Region** Attend School in the Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from the Northwest Region (Fall of 2000)

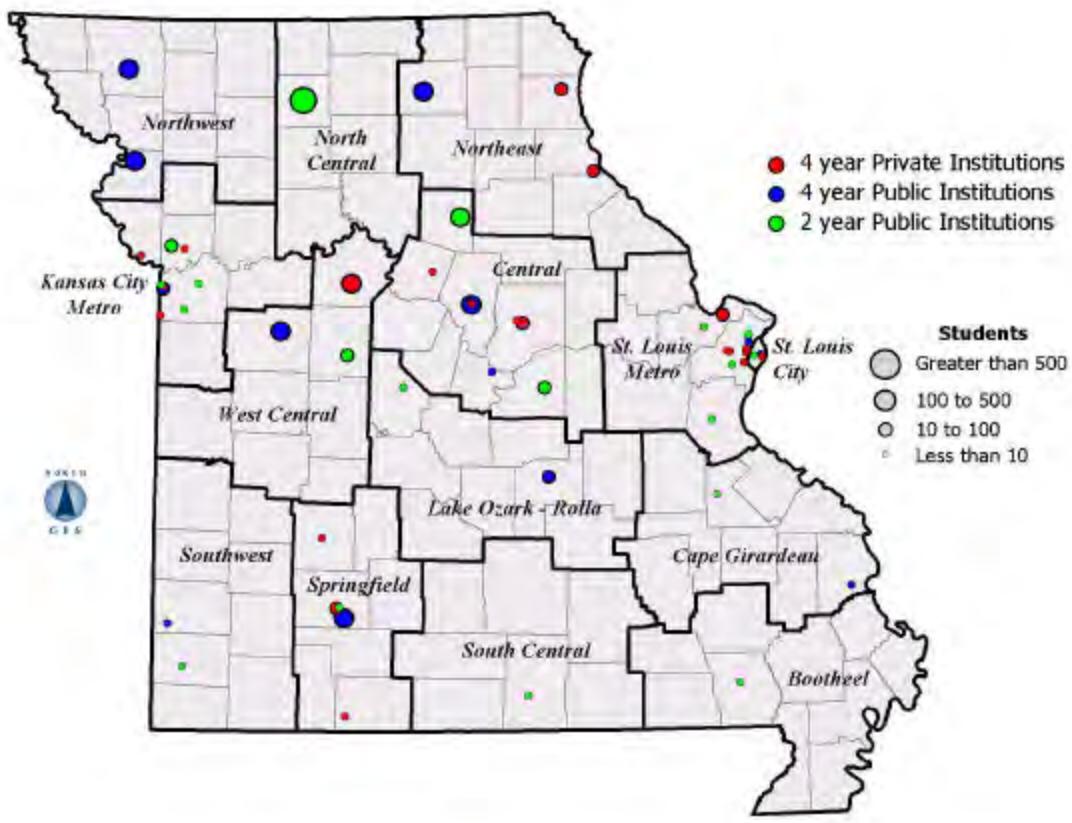
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students	2000-4000 students
UMR	UMKC	Central	UMC		Northwest	Western
Truman		Southwest	North Central			
Maple Woods						
Penn Valley						

Types of Degrees Awarded between 1996 and 2000 by the Top Four Post-Secondary Institutions Attended by Students from the Northwest Region

Course of Study	Western		Northwest		UM – Columbia			North Central AS
	AS	BA	BA	MA	BA	MA	PhD	
Agriculture	0	3	455	22	1,294	207	97	68
Business	36	674	819	125	2,349	429	29	166
Communications	0	0	351	0	1,778	288	47	0
Computer Science	0	87	75	11	292	73	8	0
Education	0	403	979	754	1,442	1,213	357	0
Engineering	0	0	0	0	1,692	473	136	0
Arts and Humanities	0	270	426	30	2,715	232	93	434
Foreign Language	0	24	9	0	281	59	13	0
Health	126	375	15	0	1,283	464	821	149
Life and Physical Sciences	0	148	116	1	1,217	141	196	0
Mathematics	0	39	20	0	135	57	49	0
Public Services	151	814	216	0	448	512	3	16
Social Science	0	259	729	41	2,386	269	195	0
Other	95	123	66	0	0	213	756	32
Totals	408	3,219	4276	984	17,312	4,630	2,800	865

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the **North Central Region** Attend School in the Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from the North Central Region (Fall of 2000)

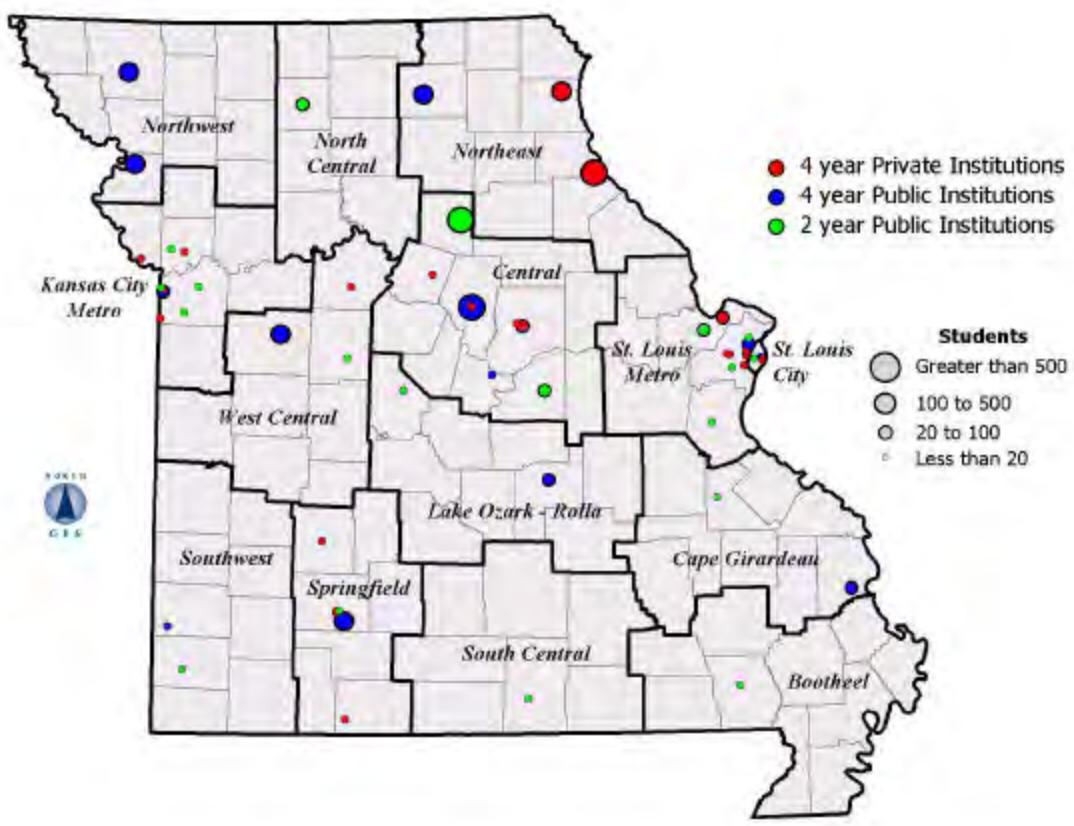
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students
UMKC		Central	UMC	North Central
UMR		Truman	Western	
Maple Woods		Northwest		
State Fair		Southwest		
		Missouri Valley		
		Moberly		

Types of Degrees Awarded between 1996 and 2000 by the Top Three Post-Secondary Institutions Attended by Students from the North Central Region

Course of Study	North Central	UM – Columbia			Western	
		AS	BA	MA	PhD	AS
Agriculture	68	1,294	207	97	0	3
Business	166	2,349	429	29	36	674
Communications	0	1,778	288	47	0	0
Computer Science	0	292	73	8	0	87
Education	0	1,442	1,213	357	0	403
Engineering	0	1,692	473	136	0	0
Arts and Humanities	434	2,715	232	93	0	270
Foreign Language	0	281	59	13	0	24
Health	149	1,283	464	821	126	375
Life and Physical Sciences	0	1,217	141	196	0	148
Mathematics	0	135	57	49	0	39
Public Services	16	448	512	3	151	814
Social Science	0	2,386	269	195	0	259
Other	32	0	213	756	95	123
Totals	865	17,312	4,630	2,800	408	3,219

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the Northeast Region Attend School in the Fall of 2000.



Post-Secondary Institutions with 20 or More Undergraduates from the Northeast Region (Fall of 2000)

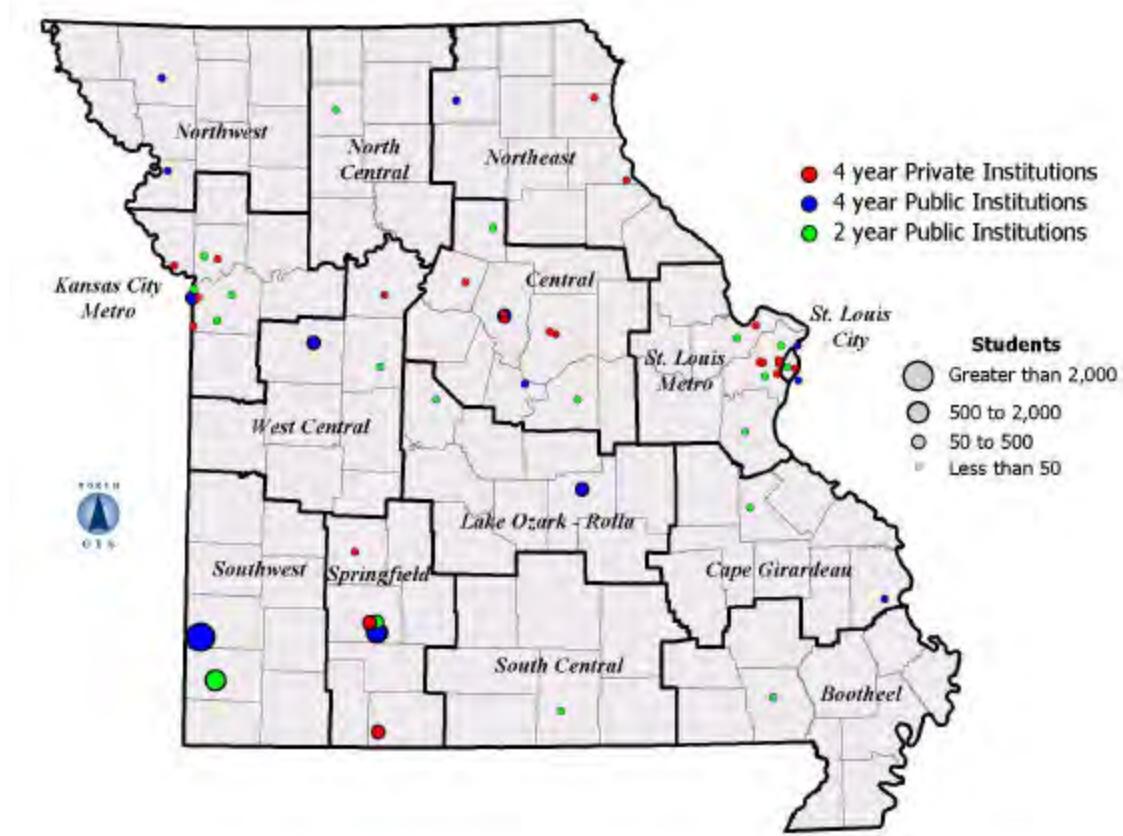
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students
UMKC	UMR	Central	Truman	UMC
UMSL	Linn State	Western	Culver-Stockton	Hannibal-Lagrange
Southeast		Northwest		Moberly
Lindenwood		Southwest		
Wm. Woods				
North Central				
St. Charles				

Types of Degrees Awarded between 1996 and 2000 by the Top Five Post-Secondary Institutions Attended by Students from the Northeast Region

Course of Study	UM – Columbia			Hannibal – Lagrange		Moberly	Truman			Culver – Stockton
	BA	MA	PhD	AS	BA		AS	BA	MA	
Agriculture	1,294	207	97	0	0	0	0	108	0	0
Business	2,349	429	29	5	185	175	7	1,144	42	192
Communications	1,778	288	47	0	34	0	0	298	0	41
Computer Science	292	73	8	2	20	16	0	111	0	2
Education	1,442	1,213	357	7	182	0	0	0	344	234
Engineering	1,692	473	136	1	0	0	0	0	0	0
Arts and Humanities	2,715	232	93	50	43	664	0	962	61	69
Foreign Language	281	59	13	0	0	0	0	102	0	0
Health	1,283	464	821	58	23	211	0	373	70	171
Life and Physical Sciences	1,217	141	196	0	9	0	0	806	21	67
Mathematics	135	57	49	0	4	0	0	109	8	6
Public Services	448	512	3	6	102	6	0	600	0	79
Social Science	2,386	269	195	0	19	0	0	1,070	56	106
Other	0	213	756	0	21	32	0	1	0	0
Totals	17,312	4,630	2,800	129	642	1,104	7	5,684	602	967

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the Southwest Region Attend School in the Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from the Southwest Region (Fall of 2000)

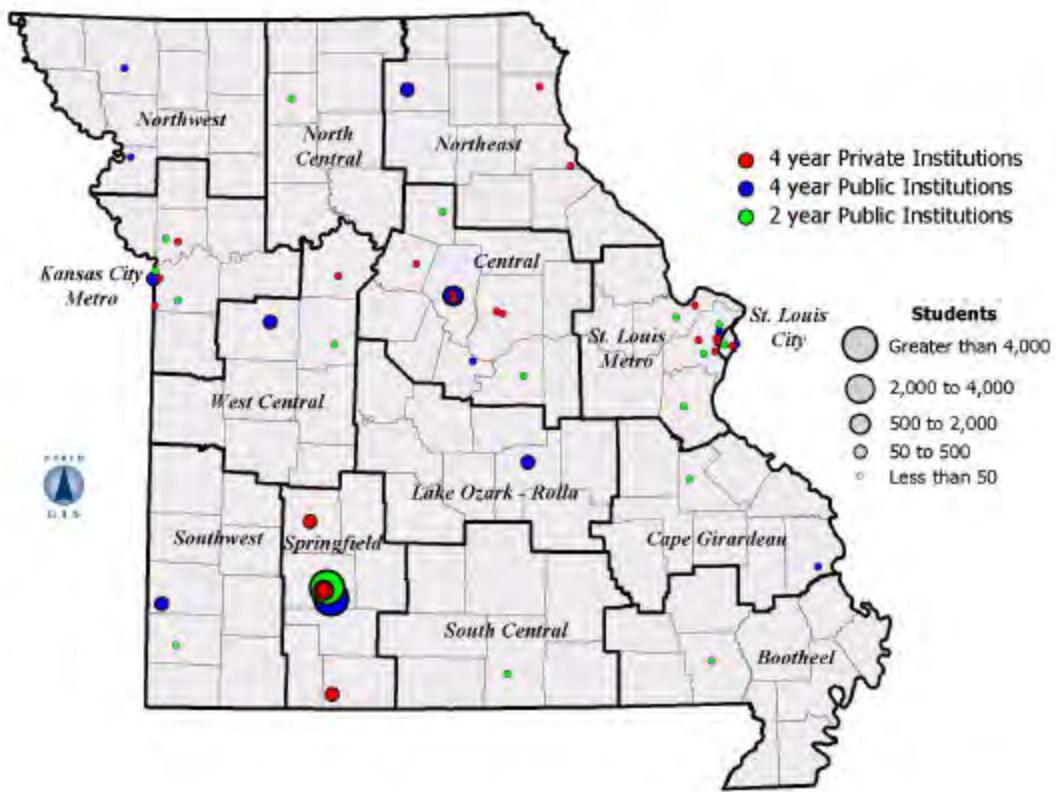
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students	2000-4000 students	4000-6000 students
Truman	UMR	UMKC	UMC	Southwest	Crowder		Southern
Northwest	Central	Drury	Ozarks Tech.				
Missouri Valley	Coll. Ozarks						
Southwest Baptist	Evangel						

Types of Degrees Awarded between 1996 and 2000 by the Top Five Post-Secondary Institutions Attended by Students from the Southwest Region

Course of Study	Southern		Crowder	Southwest			UM – Columbia			Ozarks Tech.
	AS	BA		AS	BA	MA	BA	MA	PhD	
Agriculture	0	0	101	0	518	4	1,294	207	97	0
Business	53	727	158	2	3,018	451	2,349	429	29	279
Communications	0	134	17	0	780	78	1,778	288	47	2
Computer Science	79	112	0	0	100	0	292	73	8	6
Education	0	666	84	0	1,688	1,150	1,442	1,213	357	0
Engineering	3	0	7	0	0	0	1,692	473	136	0
Arts and Humanities	78	248	428	92	1,169	208	2,715	232	93	635
Foreign Language	0	16	3	0	42	0	281	59	13	0
Health	167	186	145	0	559	209	1,283	464	821	196
Life and Physical Sciences	0	178	10	0	630	99	1,217	141	196	0
Mathematics	0	13	6	0	44	18	135	57	49	0
Public Services	273	379	8	0	537	128	448	512	3	22
Social Science	0	327	31	0	1,404	96	2,386	269	195	0
Other	73	0	122	0	293	20	0	213	756	213
Totals	726	2,986	1,120	94	10,782	2,461	17,312	4,630	2,800	1,353

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the Springfield Region Attend School in the Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from the Springfield Region (Fall of 2000)

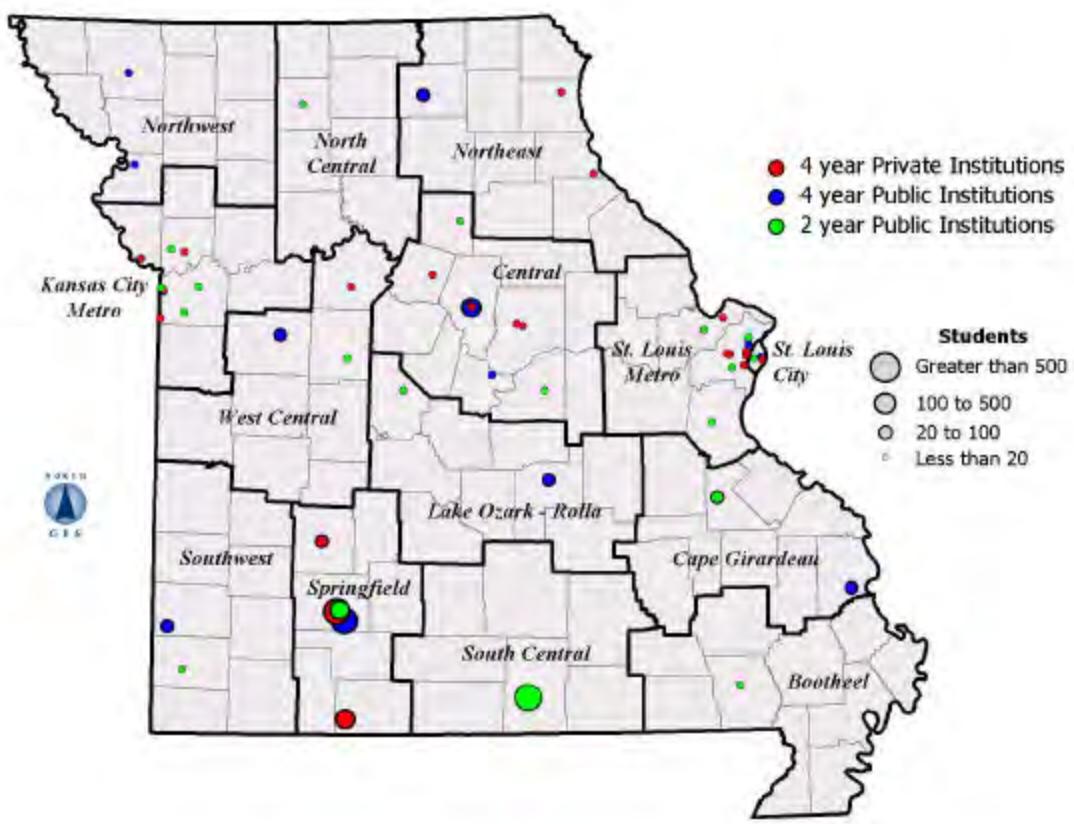
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students	2000-4000 students	4000-6000 students
Washington	UMKC	UMR	Coll. Ozarks	UMC	Drury		Southwest
MO Valley	Truman	Central	Evangel				Ozarks Tech.
Crowder	SW Baptist	Southern					
State Fair							

Types of Degrees Awarded between 1996 and 2000 by the Top Four Post-Secondary Institutions Attended by Students from the Springfield Region

Course of Study	Southwest			Ozarks Tech.	Drury			UM – Columbia		
	AS	BA	MA		AS	BA	MA	BA	MA	PhD
Agriculture	0	518	4	0	0	0	0	1,294	207	97
Business	2	3,018	451	279	159	398	105	2,349	429	29
Communications	0	780	78	2	9	151	7	1,778	288	47
Computer Science	0	100	0	6	0	0	0	292	73	8
Education	0	1,688	1,150	0	0	283	364	1,442	1,213	357
Engineering	0	0	0	0	0	0	0	1,692	473	136
Arts and Humanities	92	1,169	208	635	263	258	0	2,715	232	93
Foreign Language	0	42	0	0	0	19	0	281	59	13
Health	0	559	209	196	33	79	0	1,283	464	821
Life and Physical Sciences	0	630	99	0	0	307	0	1,217	141	196
Mathematics	0	44	18	0	0	11	0	135	57	49
Public Services	0	537	128	22	99	228	1	448	512	3
Social Science	0	1,404	96	0	0	399	0	2,386	269	195
Other	0	293	20	213	78	119	0	0	213	756
Totals	94	10,782	2,461	1,353	641	2,252	477	17,312	4,630	2,800

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the **South Central Region** Attend School in the Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from the South Central Region (Fall of 2000)

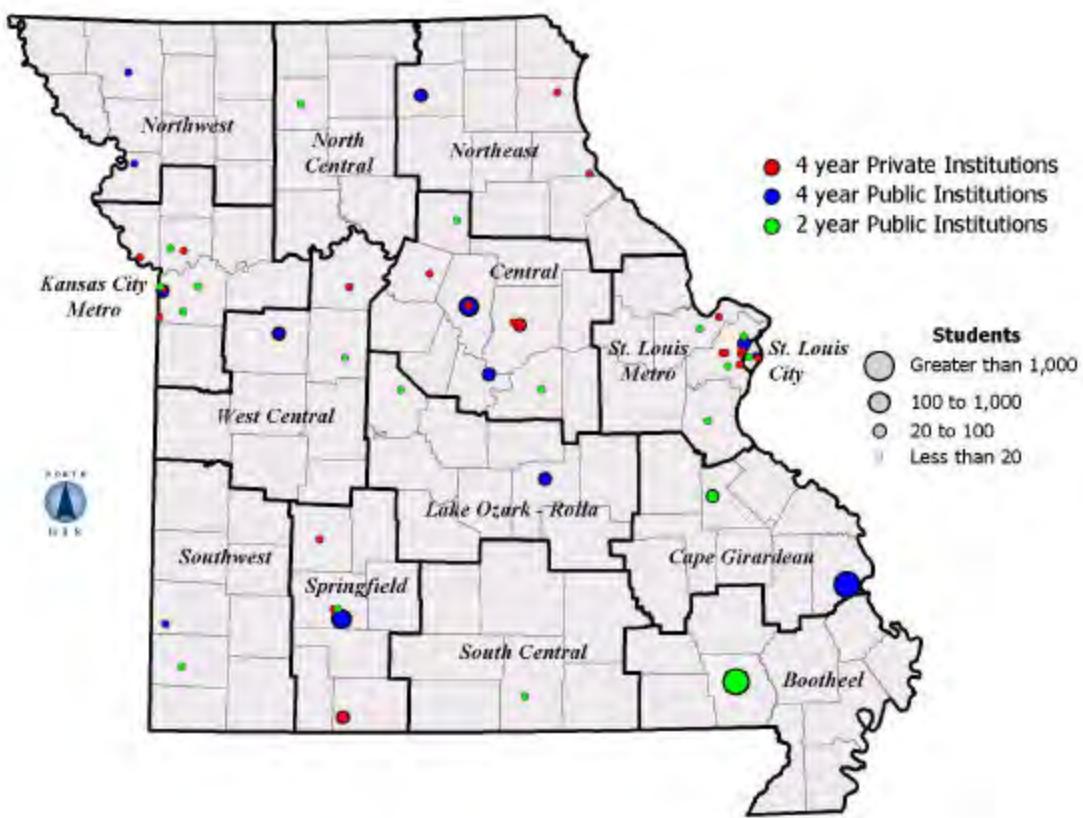
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students
Central	UMR	UMC		Southwest	West Plains
Truman	Southern	Coll. Ozarks		Drury	
Southeast	Mineral Area	Ozarks Tech.			
Evangel					
SW Baptist					

Types of Degrees Awarded between 1996 and 2000 by the Top Three Post-Secondary Institutions Attended by Students from the South Central Region

Course of Study	West Plains	Southwest			Drury		
		AS	AS	BA	MA	AS	BA
Agriculture	0	0	518	4	0	0	0
Business	22	2	3,018	451	159	398	105
Communications	0	0	780	78	9	151	7
Computer Science	0	0	100	0	0	0	0
Education	0	0	1,688	1,150	0	283	364
Engineering	0	0	0	0	0	0	0
Arts and Humanities	416	92	1,169	208	263	258	0
Foreign Language	0	0	42	0	0	19	0
Health	137	0	559	209	33	79	0
Life and Physical Sciences	0	0	630	99	0	307	0
Mathematics	0	0	44	18	0	11	0
Public Services	0	0	537	128	99	228	1
Social Science	0	0	1,404	96	0	399	0
Other	13	0	293	20	78	119	0
Totals	588	94	10,782	2,461	641	2,252	477

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the Bootheel Region Attend School in the Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from the Bootheel Region (Fall of 2000)

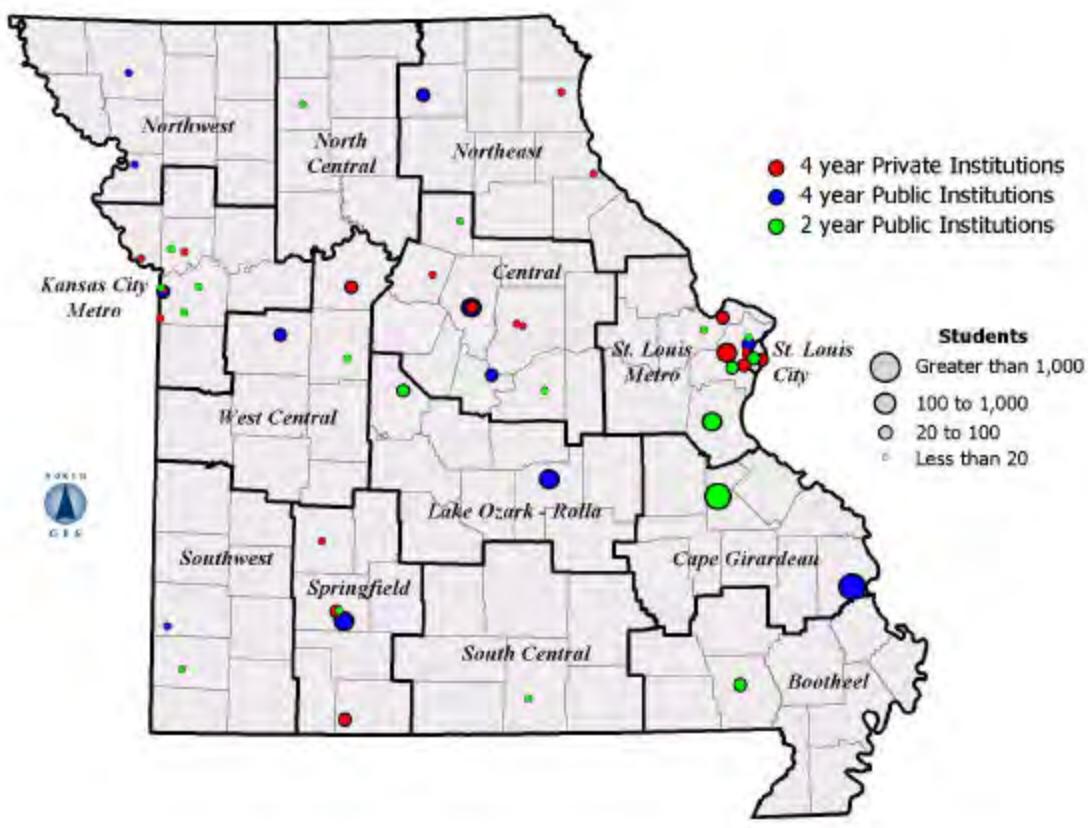
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students	2000-4000 students
UMKC	UMR		UMC		Southeast	Three Rivers
UMSL	Coll. Ozarks		Southwest			
Central	Mineral Area					
Lincoln						
Truman						
Wm. Woods						

Types of Degrees Awarded between 1996 and 2000 by the Top Four Post-Secondary Institutions Attended by Students from the Bootheel Region

Course of Study	Three Rivers	Southeast			UM – Columbia			Southwest		
		AS	AS	BA	MA	BA	MA	PhD	AS	BA
Agriculture	32	0	173	0	1,294	207	97	0	518	4
Business	417	0	856	31	2,349	429	29	2	3,018	451
Communications	0	0	375	0	1,778	288	47	0	780	78
Computer Science	0	0	120	0	292	73	8	0	100	0
Education	0	0	1,324	435	1,442	1,213	357	0	1,688	1,150
Engineering	0	3	14	0	1,692	473	136	0	0	0
Arts and Humanities	789	26	994	182	2,715	232	93	92	1,169	208
Foreign Language	0	0	35	0	281	59	13	0	42	0
Health	174	158	410	157	1,283	464	821	0	559	209
Life and Physical Sciences	0	0	306	3	1,217	141	196	0	630	99
Mathematics	0	0	28	0	135	57	49	0	44	18
Public Services	59	0	950	81	448	512	3	0	537	128
Social Science	0	0	411	20	2,386	269	195	0	1,404	96
Other	77	10	144	0	0	213	756	0	293	20
Totals	1,548	197	6,140	909	17,312	4,630	2,800	94	10,782	2,461

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the Cape Girardeau Region Attend School in the Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from the Cape Girardeau Region (Fall - 2000)

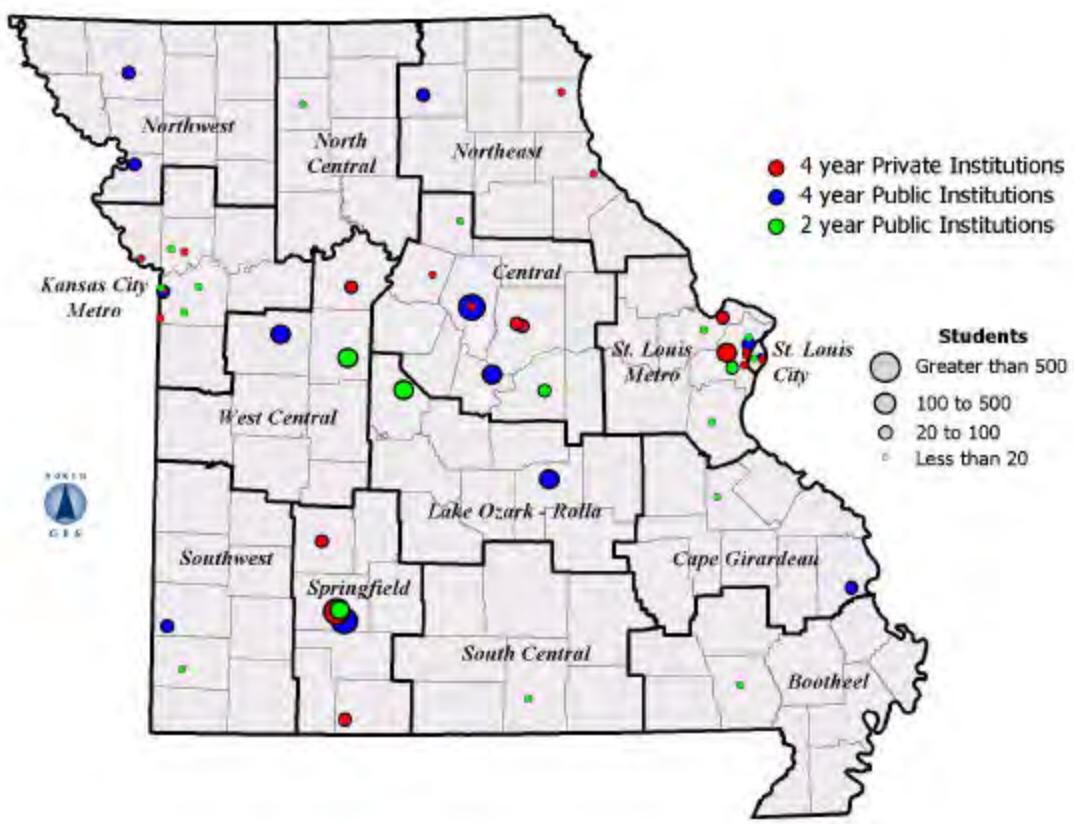
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students	2000-4000 students
UMKC	UMSL	UMR	UMC			Southeast
Central	Lincoln	Southwest	Jefferson			Mineral Area
St. Louis U.	Truman	MO Baptist				
Coll. Ozarks	Lindenwood					
Evangel	Merame					
MO Valley	Three Rivers					
Stephens						
Webster						
East Cent.						
Forest Park						

Types of Degrees Awarded between 1996 and 2000 by the Top Four Post-Secondary Institutions Attended by Students from the Cape Girardeau Region

Course of Study	Southeast			Mineral Area	UM – Columbia			Jefferson
	AS	BA	MA		AS	BA	MA	
Agriculture	0	173	0	3	1,294	207	97	0
Business	0	856	31	145	2,349	429	29	321
Communications	0	375	0	0	1,778	288	47	0
Computer Science	0	120	0	0	292	73	8	21
Education	0	1,324	435	0	1,442	1,213	357	0
Engineering	3	14	0	0	1,692	473	136	32
Arts and Humanities	26	994	182	1,021	2,715	232	93	2,703
Foreign Language	0	35	0	0	281	59	13	0
Health	158	410	157	206	1,283	464	821	18
Life and Physical Sciences	0	306	3	0	1,217	141	196	0
Mathematics	0	28	0	0	135	57	49	0
Public Services	0	950	81	54	448	512	3	23
Social Science	0	411	20	0	2,386	269	195	0
Other	10	144	0	81	0	213	756	70
Totals	197	6,140	909	1,510	17,312	4,630	2,800	2,093

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the Lake Ozark - Rolla Region Attend School in Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from Lake Ozark-Rolla Region (Fall-2000)

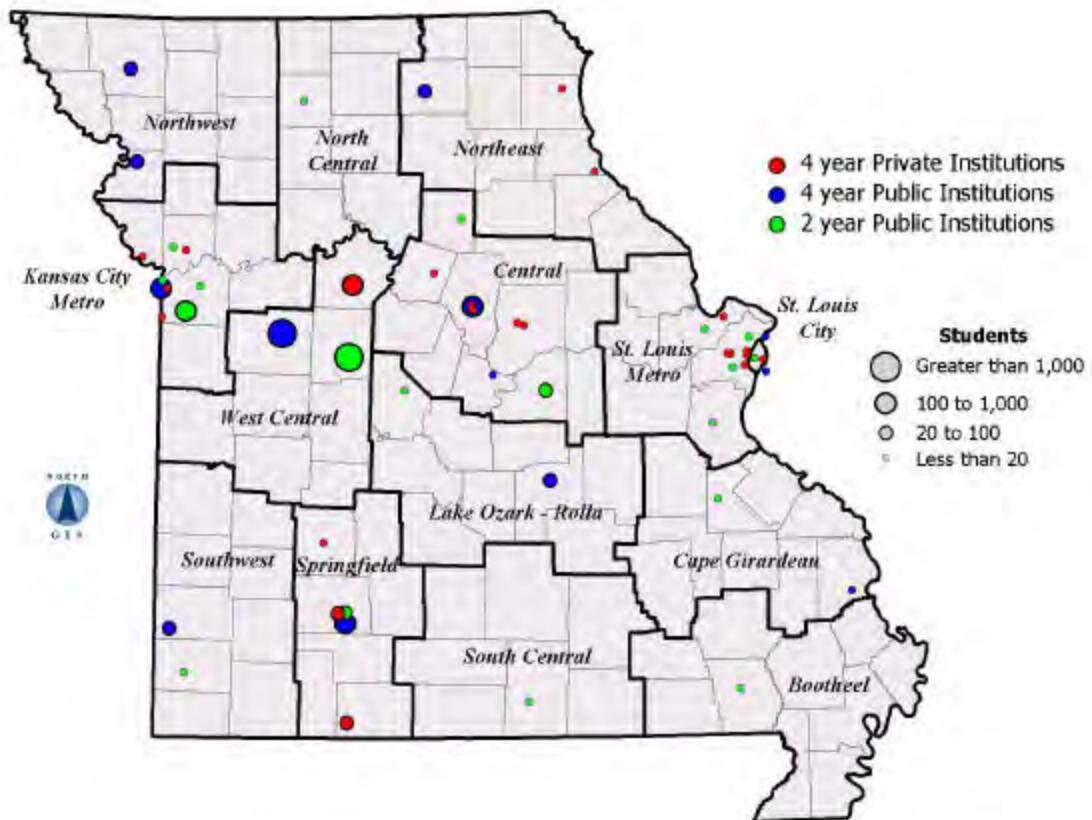
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students
UMKC	Southern	MO Baptist	UMR	UMC	Drury
UMSL	Truman		Central	Southwest	
Western	Coll. Ozarks		Lincoln		
Northwest	Linn State		East Cent.		
Southeast			Ozarks Tech.		
Evangel			State Fair		
Lindenwood					
MO Valley					
SW Baptist					
Westminster					
Wm. Woods					
Merame					

Types of Degrees Awarded between 1996 and 2000 by the Top Three Post-Secondary Institutions Attended by Students from the Lake Ozark – Rolla Region

Course of Study	Drury			UM – Columbia			Southwest		
	AS	BA	MA	BA	MA	PhD	AS	BA	MA
Agriculture	0	0	0	1,294	207	97	0	518	4
Business	159	398	105	2,349	429	29	2	3,018	451
Communications	9	151	7	1,778	288	47	0	780	78
Computer Science	0	0	0	292	73	8	0	100	0
Education	0	283	364	1,442	1,213	357	0	1,688	1,150
Engineering	0	0	0	1,692	473	136	0	0	0
Arts and Humanities	263	258	0	2,715	232	93	92	1,169	208
Foreign Language	0	19	0	281	59	13	0	42	0
Health	33	79	0	1,283	464	821	0	559	209
Life and Physical Sciences	0	307	0	1,217	141	196	0	630	99
Mathematics	0	11	0	135	57	49	0	44	18
Public Services	99	228	1	448	512	3	0	537	128
Social Science	0	399	0	2,386	269	195	0	1,404	96
Other	78	119	0	0	213	756	0	293	20
Totals	641	2,252	477	17,312	4,630	2,800	94	10,782	2,461

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the **West Central Region** Attend School in the Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from the West Central Region (Fall of 2000)

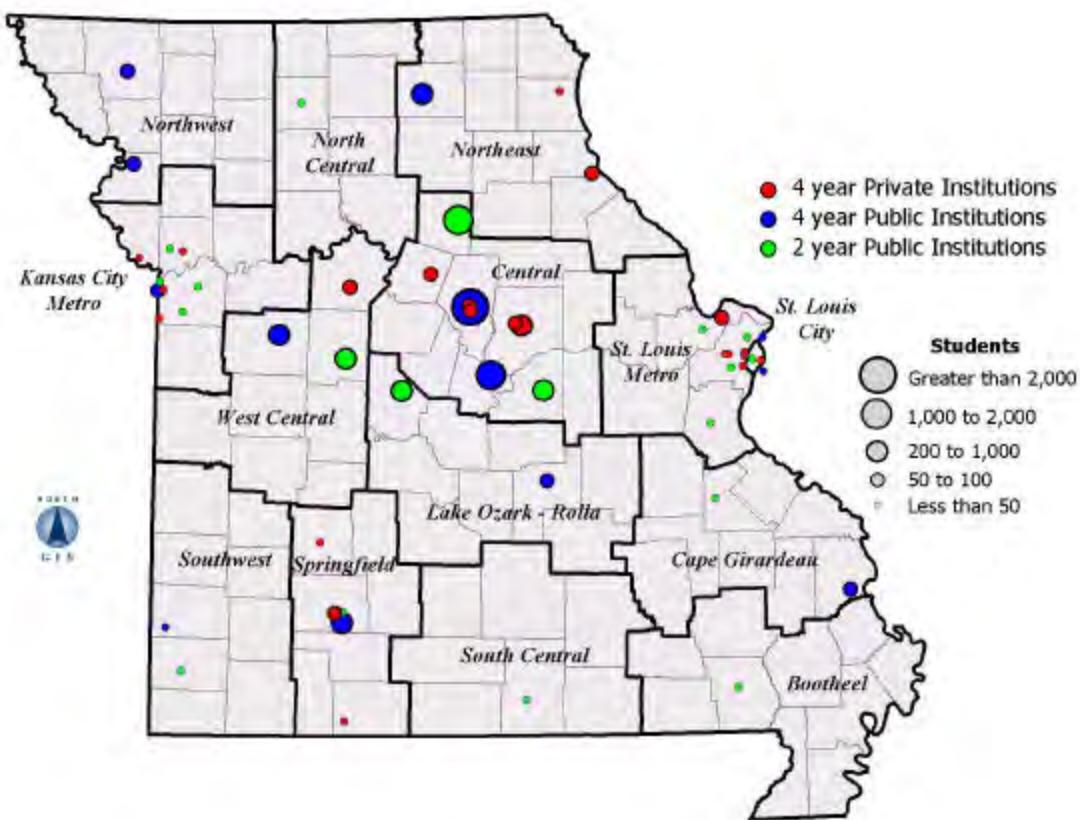
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students	2000-4000 students
Western	UMR	UMKC	UMC			Central
Coll. Ozarks	Southern	Longview	Southwest			State Fair
Drury	Truman		Missouri Valley			
Evangel	Northwest					
Ozarks Tech.						
Linn State						

Types of Degrees Awarded between 1996 and 2000 by the Top Five Post-Secondary Institutions Attended by Students from the West Central Region

Course of Study	Central			State Fair	UM – Columbia			Southwest			Missouri Valley	
	AS	BA	MA		AS	BA	MA	PhD	AS	BA	MA	AS
Agriculture	0	127	6	45	1,294	207	97	0	518	4	0	6
Business	49	1,504	149	272	2,349	429	29	2	3,018	451	3	215
Communications	0	366	57	0	1,778	288	47	0	780	78	0	22
Computer Science	0	38	0	0	292	73	8	0	100	0	0	26
Education	0	1,754	798	0	1,442	1,213	357	0	1,688	1,150	0	143
Engineering	0	41	68	0	1,692	473	136	0	0	0	0	0
Arts and Humanities	21	643	92	847	2,715	232	93	92	1,169	208	5	52
Foreign Language	0	42	93	0	281	59	13	0	42	0	0	0
Health	0	429	205	174	1,283	464	821	0	559	209	0	18
Life and Physical Sciences	0	240	9	0	1,217	141	196	0	630	99	0	59
Mathematics	0	52	20	0	135	57	49	0	44	18	0	18
Public Services	0	1,061	58	1	448	512	3	0	537	128	0	92
Social Science	0	748	351	0	2,386	269	195	0	1,404	96	0	76
Other	174	1,057	601	61	0	213	756	0	293	20	0	2
Totals	244	8,102	2,507	1,400	17,312	4,630	2,800	94	10,782	2,461	8	729

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the **Central Region** Attend School in the Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from the Central Region (Fall of 2000)

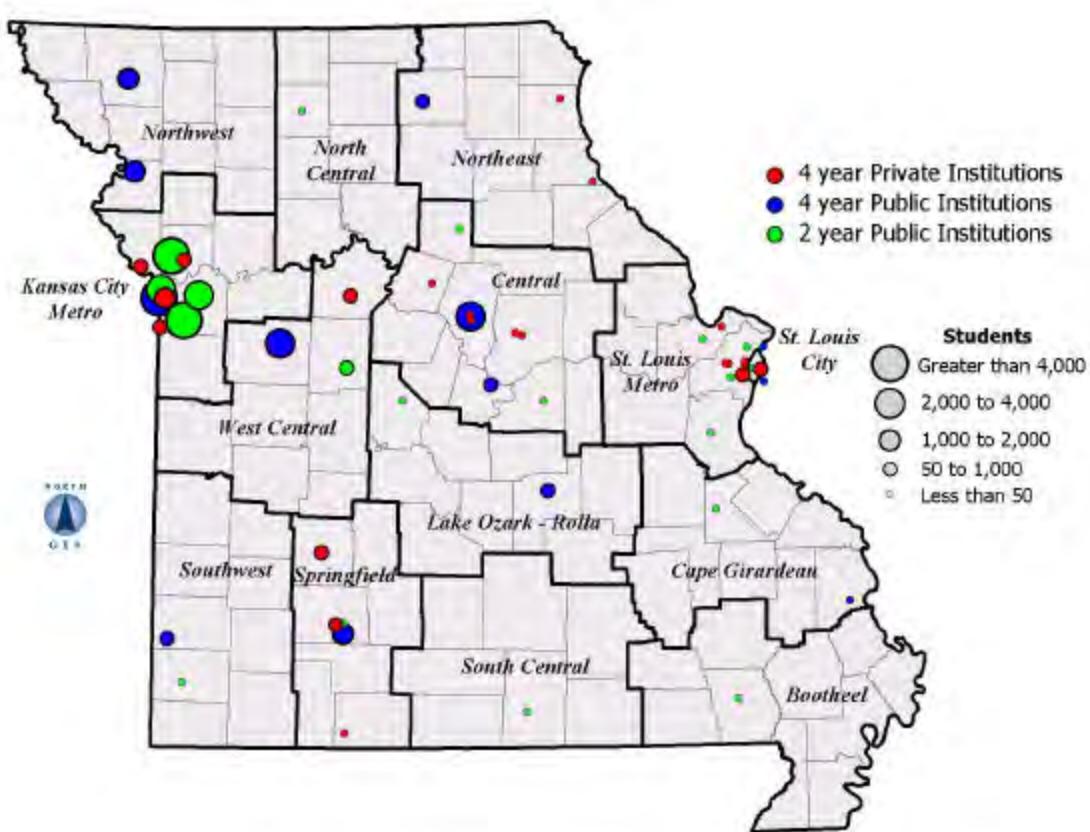
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students	2000-4000 students
UMSL	UMKC	UMR	Central	Southwest	Lincoln	UMC
Southern	Western	Northwest	Truman	State Fair	Moberly	
St. Louis U.	Southeast	Columbia	Wm. Woods			
Washington	Cent. Meth.	Stephens	Linn State			
Culver-Stock.	Drury	Westminster				
Evangel	Hann.-Lagr.	East Cent.				
Rockhurst	Lindenwood					
SW Baptist	MO Valley					
Webster						
Ozarks Tech.						
St. Charles						
Meramec						

Types of Degrees Awarded between 1996 and 2000 by the Top Five Post-Secondary Institutions Attended by Students from the Central Region

Course of Study	UM – Columbia			Lincoln			Moberly	Southwest			State Fair
	BA	MA	PhD	AS	BA	MA	AS	AS	BA	MA	AS
Agriculture	1,294	207	97	1	83	0	0	0	518	4	45
Business	2,349	429	29	5	389	69	175	2	3,018	451	272
Communications	1,778	288	47	0	33	0	0	0	780	78	0
Computer Science	292	73	8	17	136	0	16	0	100	0	0
Education	1,442	1,213	357	0	244	244	0	0	1,688	1,150	0
Engineering	1,692	473	136	11	0	0	0	0	0	0	0
Arts and Humanities	2,715	232	93	0	140	0	664	92	1,169	208	847
Foreign Language	281	59	13	0	0	0	0	0	42	0	0
Health	1,283	464	821	296	36	0	211	0	559	209	174
Life and Physical Sciences	1,217	141	196	0	42	0	0	0	630	99	0
Mathematics	135	57	49	0	17	0	0	0	44	18	0
Public Services	448	512	3	6	149	0	0	0	537	128	1
Social Science	2,386	269	195	0	169	59	0	0	1,404	96	0
Other	0	213	756	20	15	0	32	0	293	20	61
Totals	17,312	4,630	2,800	356	1,453	372	1,104	94	10,782	2,461	1,400

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the **Kansas City Metro Region** Attend School in Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from Kansas City Metro Region (Fall-2000)

20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students	2000-4000 students	4000-6000 students
Southeast	St. Louis U.	Lincoln	UMR	Truman	Western	UMC	UMKC
Washington	Drury	Southern			Northwest	Central	Longview
Cent. Meth.	Park	Avila			Southwest	Blue River	Maple Woods
Coll. Ozarks	SW Baptist	MO Valley			Rockhurst	Penn Valley	
Hann.-Lagr.	Webster	Wm. Jewell					
Lindenwood	State Fair						
Stephens							
Westminster							
Wm. Woods							
North Cent.							

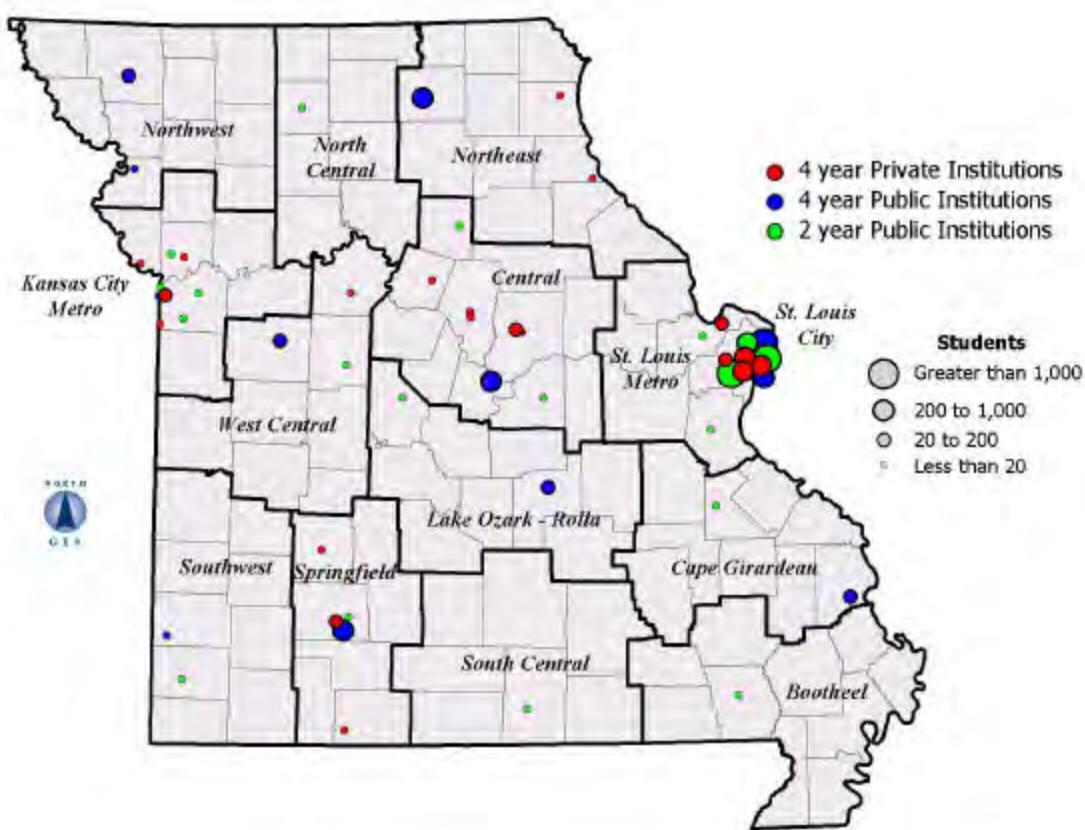
Types of Degrees Awarded between 1996 and 2000 by the Top Six Post-Secondary Institutions Attended by Students from the Kansas City Metro Region

Course of Study	UM – Kansas City			Longview	Maple Woods	UM – Columbia			Central			Penn Valley
	BA	MA	PhD			AS	BA	MA	PhD	AS	BA	MA
Agriculture	0	0	0	11	0	1,294	207	97	0	127	6	0
Business	675	963	0	152	107	2,349	429	29	49	1,504	149	81
Communications	250	26	0	0	0	1,778	288	47	0	366	57	0
Computer Science	210	173	0	21	8	292	73	8	0	38	0	9
Education	396	987	19	0	0	1,442	1,213	357	0	1,754	798	0
Engineering	0	0	0	32	5	1,692	473	136	0	41	68	12
Arts and Humanities	1,321	398	198	2,703	990	2,715	232	93	21	643	92	822
Foreign Language	75	23	0	0	0	281	59	13	0	42	93	0
Health	310	447	940	18	102	1,283	464	821	0	429	205	572
Life and Physical Sciences	776	110	8	0	0	1,217	141	196	0	240	9	0
Mathematics	33	12	2	0	0	135	57	49	0	52	20	0
Public Services	166	229	0	20	23	448	512	3	0	1,061	58	36
Social Science	971	161	40	0	0	2,386	269	195	0	748	351	0
Other	0	114	716	92	70	0	213	756	174	1,057	601	49
Totals	5,183	3,643	1,923	3,049	1,305	17,312	4,630	2,800	244	8,102	2,507	1,581

Note: Blue River has not yet graduated a class.

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the **St. Louis City Region** Attend School in the Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from the St. Louis City Region (Fall of 2000)

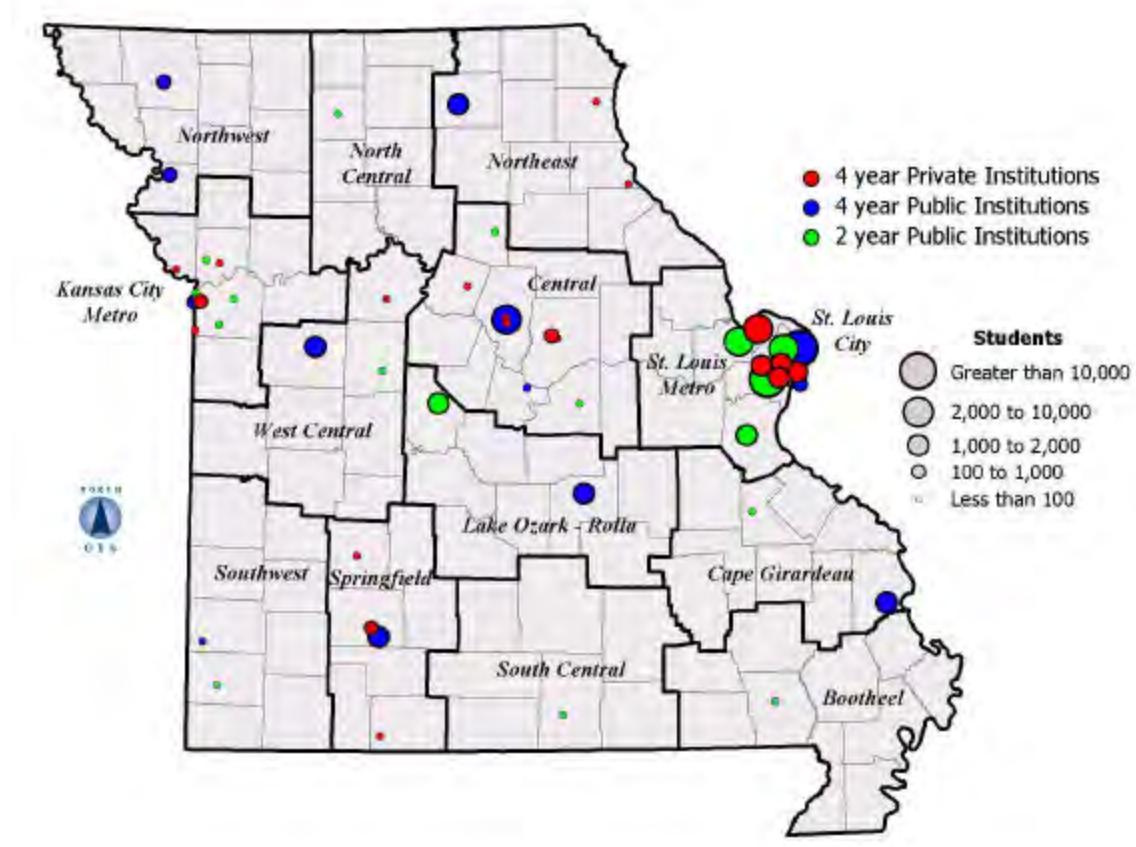
20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students	2000-4000 students
UMR	Lindenwood	Southeast	Lincoln	Harris-Stowe	UMSL	Forest Park
Central		MO Baptist	Southwest	Truman	Merame	
Northwest			Washington	St. Louis U.		
Drury			Webster	Flo. Valley		
Fontbonne						
Rockhurst						
Westminster						

Types of Degrees Awarded between 1996 and 2000 by the Top Seven Post-Secondary Institutions Attended by Students from the St. Louis City Region

Course of Study	Forest Park	UM – St. Louis			Meramec	Harris – Stowe	Truman			St. Louis Univ.				Florissant Valley
		AS	BA	MA	PhD		AS	BA	MA	AS	BA	MA	PhD	
Agriculture	0	0	0	0	85	0	0	108	0	0	5	0	0	0
Business	354	2,186	438	0	354	173	7	1,144	42	0	1,529	1,292	43	209
Communications	0	523	0	0	0	0	0	298	0	1	406	48	0	0
Computer Science	0	123	1	0	0	0	0	111	0	1	95	0	0	0
Education	0	1,622	1,522	38	0	591	0	0	344	0	261	132	272	0
Engineering	0	56	0	0	0	0	0	0	0	0	176	26	0	0
Arts and Humanities	801	749	93	0	2,419	0	0	962	61	0	346	62	39	1,741
Foreign Language	0	77	0	0	0	0	0	102	0	0	110	54	0	0
Health	593	692	355	210	695	1	0	373	70	0	1,529	1,053	772	336
Life and Physical Sciences	0	442	215	50	0	0	0	806	21	0	656	122	97	0
Mathematics	0	52	21	0	0	0	0	109	8	0	57	23	3	0
Public Services	311	329	50	0	201	24	0	600	0	0	240	519	17	205
Social Science	0	1,474	255	60	0	0	0	1,070	56	0	845	119	105	0
Other	271	0	0	0	205	0	0	1	0	40	352	26	1,213	255
Totals	2,282	8,325	2,950	358	3,959	789	7	5,684	602	42	6,607	3,476	2,561	2,746

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001

Where Did Undergraduates from the St. Louis Metro Region Attend School in the Fall of 2000



Post-Secondary Institutions with 20 or More Undergraduates from the St. Louis Metro Region (Fall of 2000)

20-50 students	50-100 students	100-250 students	250-500 students	500-1000 students	1000-2000 students	2000-4000 students	4000-6000 students	6000-8000 students	Greater than 8000
Central Methodist	Southern	Western	UMKC	Harris-Stowe	UMR	Southwest	St. Charles	UMC	UMSL
College of the Ozarks	Culver-Stockton	Northwest	Rockhurst		Central	St. Louis University	Florissant Valley		Meramec
Evangel	Hannibal-Lagrange	Drury			Truman	Lindenwood			
Southwest Baptist	Missouri Valley	Fontbonne			Southeast	East Cent.			
Wm. Jewell	Wm. Woods	Maryville			Washington	Jefferson			
Mineral Area	Linn State	Westminster			Missouri Baptist	Forest Park			
Moberly					Webster				
Ozarks Tech.									
State Fair									

Types of Degrees Awarded between 1996 and 2000 by the Top Five Post-Secondary Institutions Attended by Students from the St. Louis Metro Region

Course of Study	UM – St. Louis			Meramec	UM – Columbia			St. Charles	Florissant Valley
	BA	MA	PhD		BA	MA	PhD		
Agriculture	0	0	0	85	1,294	207	97	0	0
Business	2,186	438	0	354	2,349	429	29	186	209
Communications	523	0	0	0	1,778	288	47	0	0
Computer Science	123	1	0	0	292	73	8	8	0
Education	1,622	1522	38	0	1,442	1,213	357	52	0
Engineering	56	0	0	0	1,692	473	136	12	0
Arts and Humanities	749	93	0	2,419	2,715	232	93	827	1,741
Foreign Language	77	0	0	0	281	59	13	0	0
Health	692	355	210	695	1,283	464	821	303	336
Life and Physical Sciences	442	215	50	0	1,217	141	196	3	0
Mathematics	52	21	0	0	135	57	49	1	0
Public Services	329	50	0	201	448	512	3	24	205
Social Science	1,474	255	60	0	2,386	269	195	9	0
Other	0	0	0	205	0	213	756	44	255
Totals	8,325	2950	358	3,959	17,312	4,630	2,800	1,469	2,746

Source: Statistical Summary of Higher Education 1996-97 through 2000-2001IV. Policy

IV. Policy Implications

From the above study it is evident that Missouri's colleges and universities are providing a particular mix of skills for its future workforce. The best provisioned area of expertise, from the Associates degree level through the Doctoral degree, is business. These skills are being well provided for by Missouri's post-secondary institutions. The second best populated subject area across a broad spectrum of expertise is education, followed by the biological and life sciences. Missouri awards most of its baccalaureate and higher level degrees in business, education and health. This evidence argues that [Missouri is well prepared to target the life science industries for growth and expansion](#). The production of engineers, mathematicians and computer scientists must be increased if Missouri is to meet the employment needs of information technology and advanced manufacturing.

Implications for the Target Missouri 2 Initiative

The Target Missouri 2 (TM2) initiative assists local, regional, and state economic developers through improved information, to attract those industries with the greatest impact for Missouri's economy. TM2 seeks to take into account the sub-economies within the state and identify which industries will generate the greatest regional economic impact, acknowledging that different industries may affect different regions differently. TM2 is currently targeting the information technology, advanced manufacturing, and life sciences industries in general for Missouri, because of their higher than average wage and high potential for growth in the national economy. This study indicates that Missouri is well prepared for growth in the life sciences industry. It further indicates that growth in the information technology and advanced manufacturing industries will be limited by a lack of skilled personnel.

The effort to remedy the scarcity of engineers, mathematicians and computer scientists can be enhanced by enlisting Missouri's information technology and advanced manufacturing businesses in improving the awareness of high school students of potential career opportunities. **Sustained school-business partnerships and tutorial programs could greatly improve student interest, support student efforts, and reduce the need for remediation during the first year of college.** Furthermore, regional information technology and advanced manufacturing businesses should be encouraged to consult with post-secondary institutions in their regions on the training of both current and prospective employees. Economies of scale in training as well as improved expansion planning may be realized for Missouri's target industries, as regional institutions prove responsive to tailoring programs to specific student populations.

Implications for the K-16 Coalition

In December 1997, the State Board of Education, the Coordinating Board for Higher Education, and the University of Missouri Board of Curators, created the Missouri K-16 Coalition as a partnership among business, education, and political leaders. The Missouri K-16 Coalition is committed to quality education at all levels, and exemplifies a mode of cooperation among Missouri's education policymakers. The regional character of post-secondary attendance will impact any K-16 Coalition efforts to prepare Missouri's future workforce. **Because of its high usage among undergraduates, the 2-year college system should be viewed and used as an asset in the effort to ease transition into post-secondary education.** Furthermore, the K-16 Coalition must begin its efforts to improve mathematics and science education well before the 11th grade if it is to have a significant effect on post-secondary rates of graduation in mathematics and the physical sciences.

V. Summary and Conclusions

Missouri is well prepared across a broad range of expertise to support growth in the life science industries. Missouri's production of engineers, mathematicians and computer scientists must be increased if it is to meet the needs of information technology and advanced manufacturing. Any effort to increase the number of engineers, mathematicians and computer scientists graduating in Missouri must begin in Missouri's public schools with an increased focus on algebra, geometry, trigonometry, and the basic principles of the physical sciences. The Regional Professional Development Centers (RPDC) as a strategically placed part of the Department of Elementary and Secondary Education's educational infrastructure, may be best positioned to lead in this effort. Regional businesses should be enlisted to aid in conveying the importance of math and science for students' futures. Regional businesses should also be encouraged to consult with post-secondary institutions in their regions on the training of current and prospective employees. Economies of scale in training as well as improved expansion planning may be realized for Missouri businesses, as regional institutions prove responsive to tailoring programs to specific student populations. Emphasis on a regional approach to skills development will also promote economic development strategies, considering that students usually attend undergraduate institutions near their homes.

Appendix 1: Classification of Instructional Programs for each CBHE Category

Source: Statistical Summary of Higher Education 1999-2000

CBHE Category	CIP Name	CIP Code
Agriculture	Agribusiness and Agricultural Production	01
	Agricultural Sciences	02
	Renewable Natural Resources	03
	Business Management/ Admin. Services	52
Business		(previously 06 and 07)
	Marketing and Distribution	08
Communications	Communications	09
	Communications Technologies	10
Computer Science	Computer and Information Sciences	11
	Education	13
Engineering	Engineering	14
	Home Economics	19
Arts and Humanities	Vocational Home Economics	20
	Letters	23
	Liberal/ General Studies	24
	Multi-Interdisciplinary Studies	30
	Philosophy and Religion	38
	Visual and Performing Arts	50
	Foreign Languages	16
	Health Professional/ Related Sciences	51
		(previously 17 and 18)
Life and Physical Sciences	Life Sciences	26
	Physical Sciences	40
Math	Mathematics	27
	Parks and Recreation	31
Public Services	Protective Services	43
	Public Affairs	44
Social Sciences	Area and Ethnic Studies	05
	Psychology	42
	Social Sciences	45
Other	Engineering and Engineering Related Technologies	15
	Industrial Arts	21
	Science Technologies	41
	Precision Production	48
	Architecture and Environmental Design	04
	Law	22
	Library and Archival Sciences	25
	Theology	39
	Consumer, Personal and Misc. Services	12
	Military Sciences	28
	Military Technologies	29
	Basic Skills	32
	Citizenship/ Civic Activities	33
	Health Related Activities	34
	Interpersonal Skills	35
	Leisure and Recreational Activities	36
	Personal Awareness	37

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October 2001

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